The following remarks are grouped to reflect the organization of the office action. In this regard, the following remarks include the same headings as the office action.

Paragraph 3 – Claims 1 and 37

Claims 1 and 37 stand rejected under 35 U.S.C. §102(b) as being anticipated by Bertin et al. (U.S. Patent No. 5,687,167). Applicants appreciate the examiner's time and the courtesy extended during the March 3, 2003 telephonic interview with applicants' representative, Grace Law. During the interview, an agreement was reached that the Bertin et al. reference does not disclose the features of "requesting a rebalancing module to *re-balance the existing bandwidth allocation* to the plurality of devices connected to the bus wherein the rebalancing module *may change the bandwidth allocations* to the plurality of devices connected to the bus and *request a particular-device to change its particular-bandwidth-allocation in accord with a policy*," as recited in independent claims 1 and 37.

In the Bertin et al. reference, a bandwidth management system identifies the *best possible route* according to the network status and the connection parameters, which include a connection priority (Col. 8, lines 32-39). Unlike the present application, the Bertin et al. reference does not rebalance the existing bandwidth allocation as recited in the claims. Furthermore, if resources needed to satisfy a request are not available in the network, the bandwidth management system simply rejects the connection (Col. 13, lines 32-39). Thus, the Bertin et al. reference does not "change the bandwidth allocations to the plurality of devices connected to the bus and request a particular-device to change its particular-bandwidth-allocation in accord with a policy" as recited in independent claims 1 and 37.

Paragraph 4 – Claims 35 and 36

Claims 35 and 36 stand rejected under 35 U.S.C. §102(e) as being anticipated by Scheurich (U.S. Patent No. 5,848,266). During the interview, it was agreed that the Scheurich reference does not disclose a "USB-compliant device with *dynamic bandwidth adjustment capability* in an isochronous data transfer mode wherein said device *is capable of* executing a command to *change its current-bandwidth-usage setting to a specified-bandwidth-usage setting* while receiving and/or sending data" as recited in claim 35.

In the Scheurich reference, a digital representation of a time varying signal is adjusted according to the bandwidth available over a bus (Col. 3, lines 1-3). In other words, the quality of the video file (i.e., digital signal) is adjusted, rather than the bandwidth of the transmission.

Claim 36 depends from claim 35, and it necessarily includes all of the features of claim 35. The Section 102 rejection of claim 36 should be withdrawn for the same reasons stated above with respect to claim 35.

Paragraph 6 – Claims 2-36

Claims 2-36 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Bertin et al. in view of Scheurich. Claims 2-19 depend from claim 1, claim 20 is an independent claim and claims 21-34 depend from claim 20. Claim 35 is an independent claim and claim 36 depends from claim 35. The rejection of claims 2-36 based on a combination of the teachings of the Bertin et al. and Scheurich patents overlaps the rejection of claims 35 and 36 as being fully

anticipated by the Scheurich patent alone. Applicants assume the overlap is a mistake and not intended to be an alternative rejection of claims 35 and 36.

In either event, neither of the references disclose or suggest adjusting bandwidth with transmitting and sending data. In this regard, during the interview, an agreement was reached that the cited references do not disclose or suggest (1) "requesting the second device to *reduce* second-device-*bandwidth-usage*" as recited in independent claim 20 or (2) a "USB-compliant device with *dynamic bandwidth adjustment capability* in an isochronous data transfer mode wherein said device *is capable of* executing a command to *change its current-bandwidth-usage setting to a specified-bandwidth-usage setting* while receiving and/or sending data" as recited in independent claim 35. Even if the cited references suggest a combination, whatever the combination may be, cannot reasonably include features taught in neither reference.

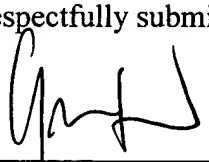
Claims 2-19, 21-34, and 36 depend from claims 1, 20, and 35, respectively, and they necessarily include all of the features of their associated independent claims. Thus, the Section 103 rejection of the dependent claims should also be withdrawn for the same reasons stated above with respect to their independent counterparts—i.e., claims 1, 20, and 35.

CONCLUSION

In view of the above amendments and remarks, the application is considered in good and proper form for allowance, and the examiner is respectfully requested to pass this application to issue.

If, in the opinion of the examiner, a telephone conference would expedite the prosecution of the subject application, the examiner is invited to call the undersigned attorney.

Respectfully submitted,



Grace Law, Reg. No. 48,872
One of the Attorneys for Applicant(s)
LEYDIG, VOIT & MAYER, LTD.
Two Prudential Plaza, Suite 4900
180 North Stetson
Chicago, Illinois 60601-6780
(312) 616-5600 (telephone)
(312) 616-5700 (facsimile)

Date: March 18, 2003

PATENT
Attorney Docket No. 200786

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

SENIOR et al.

Group Art Unit: 2181

Application No. 09/364,220

Examiner: Chung Trans, Xuong My

Filed: July 29, 1999

For: USB TRANSPARENT BANDWIDTH

AMENDMENTS TO THE CLAIMS MADE IN RESPONSE TO OFFICE ACTION DATED DECEMBER 20, 2002

IN THE CLAIMS:

Amend claims **1, 12-18, 20, 27-29 and 37** as follows:

1. (Amended) A method for rebalancing an existing bandwidth allocation to a plurality of devices connected to a computer system via a bus, the method comprising: intercepting a failure of a request by a first device to obtain bandwidth; requesting a rebalancing module to re-balance the existing bandwidth allocation to the plurality of devices connected to the bus wherein the rebalancing module may change the bandwidth allocations to the plurality of devices connected to the bus and request a particular-device to change its particular-bandwidth-allocation in accord with a ~~Policy~~policy; utilizing, if the particular-device fails to change its particular bandwidth, an option to reset the particular-device to release the entire particular-bandwidth-allocation as part of the rebalancing; and completing the rebalancing by the rebalancing module including a generation of optional messages.

12. (Amended) The method of claim 2 wherein the ~~Policy~~policy includes that bandwidth resources required by a currently running application are preferred over requirements of a minimized application.

13. (Amended) The method of claim 2 wherein the ~~Policy~~policy includes that bandwidth resources required by a first application are preferred over requirements of a second application if the output of the first application is in the foreground relative to the output of the second application.

14. (Amended) The method of claim 2 wherein the ~~Policy~~policy includes that bandwidth resources, required by a most-recently-used-application, are preferred over requirements of other applications.

15. (Amended) The method of claim 2 wherein the ~~Policy~~policy includes that the bandwidth request by the latest device connected to the USB is preferred over other requests.

16. (Amended) The method of claim 2 wherein the ~~Policy~~policy includes that bandwidth resources required by a prescribed configuration of devices be preferred over requests that would require undoing the prescribed configuration.

17. (Amended) The method of claim 2 wherein the ~~Policy~~policy includes resetting more than one device whereby bandwidth is released.

18. (Amended) The method of claim 2 wherein the ~~Policy~~policy includes that more than one device, in the alternative, may be reset to release bandwidth.

20. (Amended) A method for rebalancing an existing-bandwidth-allocation, to a plurality of devices connected to a USB, due to a request for bandwidth by a first-device connected to the USB, said method comprising: handling a rebalancing event; determining the existing-bandwidth-allocation; determining a plurality of second-device-bandwidth-modes corresponding to a second-device connected to the USB; requesting the second device to reduce second-device-bandwidth-usage; and requesting a second-device-hub-driver to reset the second-device if second-device-bandwidth-usage is not reduced and resetting the second-device in accordance with a ~~Policy~~policy.

27. (Amended) The method of claim 20 wherein the ~~Policy~~policy includes preferences for allocating bandwidth based on other devices being used.

28. (Amended) The method of claim 20 wherein the ~~Policy~~policy includes preferences for allocating bandwidth based on a time when rebalancing event is generated.

29. (Amended) The method of claim 20 wherein the ~~Policy~~policy includes a preference for allocating bandwidth based on a priority value associated with the first-device.

37. (Amended) A method for rebalancing an existing bandwidth allocation to a plurality of devices connected to a computer system via a bus, the method comprising: responsively to a failure of a request by a first device to obtain bandwidth by conventional means; requesting a rebalancing-enabler to re-balance the existing bandwidth allocation to the plurality of devices connected to the bus wherein the rebalancing-enabler may change the bandwidth allocations to the plurality of devices connected to the bus and request a particular-device to change its particular-bandwidth-allocation in accord with a ~~Policy~~policy; utilizing, if the particular-device fails to change its particular bandwidth, an option to reset the particular-device to release the entire particular-bandwidth-allocation as part of the rebalancing; and completing the rebalancing by the rebalancing module including generation of optional messages.

PATENT
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Examiner: Chung Trans, Xuong My

Filed: July 29, 1999

For: USB TRANSPARENT BANDWIDTH

PENDING CLAIMS AFTER AMENDMENTS MADE IN RESPONSE TO OFFICE ACTION DATED DECEMBER 20, 2002

1. A method for rebalancing an existing bandwidth allocation to a plurality of devices connected to a computer system via a bus, the method comprising: intercepting a failure of a request by a first device to obtain bandwidth; requesting a rebalancing module to re-balance the existing bandwidth allocation to the plurality of devices connected to the bus wherein the rebalancing module may change the bandwidth allocations to the plurality of devices connected to the bus and request a particular-device to change its particular-bandwidth-allocation in accord with a policy; utilizing, if the particular-device fails to change its particular bandwidth, an option to reset the particular-device to release the entire particular-bandwidth-allocation as part of the rebalancing; and completing the rebalancing by the rebalancing module including a generation of optional messages.

2. The method of claim 1 where the bus is a Universal Serial Bus (USB).

3. The method of claim 1 where the bus is a "FireWire" bus.

4. The method of claim 2 wherein rebalancing requires no input from a user and is transparent to the user.

5. The method of claim 2 wherein a hub driver, connected to the USB, makes the rebalancing request.

6. The method of claim 2 wherein the method is implemented using a user-mode application and a user-mode to kernel-mode interface.

7. The method of claim 6 wherein the interface between the user-mode to kernel-mode is a "WMI" interface.

8. The method of claim 2 wherein the method is implemented using a kernel-mode module and/or a user-mode to kernel-mode interface.

9. The method of claim 2 wherein a hub-driver corresponding to a hub connected to the USB intercepts the failure of the first-device-bandwidth-request.

10. The method of claim 2 wherein a Host controller intercepts the failure of the first-device-bandwidth-request.

11. The method of claim 2 wherein a denial of first-device-bandwidth-request results in a pop-up box informing the user.

12. The method of claim 2 wherein the policy includes that bandwidth resources required by a currently running application are preferred over requirements of a minimized application.

13. The method of claim 2 wherein the policy includes that bandwidth resources required by a first application are preferred over requirements of a second application if the output of the first application is in the foreground relative to the output of the second application.

14. The method of claim 2 wherein the policy includes that bandwidth resources, required by a most-recently-used-application, are preferred over requirements of other applications.

15. The method of claim 2 wherein the policy includes that the bandwidth request by the latest device connected to the USB is preferred over other requests.

16. The method of claim 2 wherein the policy includes that bandwidth resources required by a prescribed configuration of devices be preferred over requests that would require undoing the prescribed configuration.

17. The method of claim 2 wherein the policy includes resetting more than one device whereby bandwidth is released.

18. The method of claim 2 wherein the policy includes that more than one device, in the alternative, may be reset to release bandwidth.

19. A computer readable medium having computer-executable instructions for performing the steps recited in claim 2.

20. A method for rebalancing an existing-bandwidth-allocation, to a plurality of devices connected to a USB, due to a request for bandwidth by a first-device connected to the USB, said method comprising: handling a rebalancing event; determining the existing-bandwidth-allocation; determining a plurality of second-device-bandwidth-modes corresponding to a second-device connected to the USB; requesting the second device to reduce second-device-bandwidth-usage; and requesting a second-device-hub-driver to reset the second-device if second-device-bandwidth-usage is not reduced and resetting the second-device in accordance with a policy.

21. The claim of method 20 wherein a message is generated to indicate end of rebalancing.

22. The method of claim 21 wherein if the bandwidth request by the first-device is greater than an allowable-first-device-bandwidth, rebalancing is completed with no optional bandwidth reductions.

23. The method of claim 20 wherein the second-device-bandwidth-usage reduction request is sent to a second-device-driver, and wherein the second-device-driver dynamically adjusts a second-device-interface.

24. The method of claim 20 wherein the second-device-hub-driver generates the rebalancing event.

25. The method of claim 20 wherein the request to reduce second-device-bandwidth-usage specifies a desired-bandwidth-usage in accord with the plurality of second-device-bandwidth-modes.

26. The method of claim 24 wherein furthermore, if the second-device-bandwidth-usage is not reduced, a request is made to reduce a third-device-bandwidth-usage after determining a plurality of third-device-bandwidth-modes corresponding to a third-device.

27. The method of claim 20 wherein the policy includes preferences for allocating bandwidth based on other devices being used.

28. The method of claim 20 wherein the policy includes preferences for allocating bandwidth based on a time when rebalancing event is generated.

29. The method of claim 20 wherein the policy includes a preference for allocating bandwidth based on a priority value associated with the first-device.

30. The method of claim 21 wherein if no reductions are possible by the plurality of devices connected to the USB the message to indicate rebalancing is complete is generated.

31. The method of claim 20 wherein the method is carried out by a user-mode application which interacts with a plurality of device drivers through a user-mode to kernel-mode interface.

32. The method of claim 20 wherein the method is carried out by a kernel-mode module.

33. The method of claim 31 wherein the user-mode to kernel-mode interface is a "WMI" interface.

34. A computer readable medium having computer-executable instructions for performing the steps recited in claim 20.

35. An USB-compliant device with dynamic bandwidth adjustment capability in an isochronous data transfer mode wherein said device is capable of executing a command to change its current-bandwidth-usage setting to a specified-bandwidth-usage setting while receiving and/or sending data.

36. The device of claim 35 wherein the device terminates pending data transfers at its current-bandwidth-setting in response to a request to change to the specified-bandwidth-usage setting.

37. A method for rebalancing an existing bandwidth allocation to a plurality of devices connected to a computer system via a bus, the method comprising: responsively to a failure of a request by a first device to obtain bandwidth by conventional means; requesting a rebalancing-enabler to re-balance the existing bandwidth allocation to the plurality of devices connected to the bus wherein the rebalancing-enabler may change the bandwidth allocations to the plurality of devices connected to the bus and request a particular-device to change its particular-bandwidth-allocation in accord with a policy; utilizing, if the particular-device fails to change its particular bandwidth, an option to reset the particular-device to release the entire particular-bandwidth-allocation as part of the rebalancing; and completing the rebalancing by the rebalancing module including generation of optional messages.